UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,521	05/11/2004	Wen-Sheng Hou	SISP0015USA	3520

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EXAMINER
PEREZ, JAMES M

ART UNIT	PAPER NUMBER
2609	

NOTIFICATION DATE	DELIVERY MODE
06/04/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/709,521	HOU ET AL.
	Examiner	Art Unit
	James Perez	2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>5/11/2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-17,19-23,25, and 27-30</u> is/are rejected.

7)☒ Claim(s) <u>18,24 and 26</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>11 May 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Detailed Action

1.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   **Claims 28 and 30 are rejected under 35 U.S.C 112, 2nd paragraph. Claim 28**

recites the limitation "the multiplication signal of the peak power detecting

module" in lines 3-4 of claim 28. There is insufficient antecedent basis for

this limitation in the claim.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   **Claims 1, 3-6, and 11 are rejected under 35 U.S.C. 102(b) as being**

anticipated by the admitted Prior Art disclosed by the applicant.

As per claim 1, the Prior Art disclosed by applicant teaches a method of packet

detection, wherein a receiver (paragraph 4, line 5) receives an input signal, the input

signal comprising a packet (paragraph 4, line 6), and the packet comprising a preamble

(paragraph 5, lines 1-2) which comprises a plurality of pseudo-noise (PN) codes

(paragraph 5, lines 1-2), the method comprising: obtaining a correlation of the input

signal (paragraph 8, line 2); detecting a peak power (paragraph 9, line 1) of the input

signal; and determining if the packet is detected (paragraph 9, lines 2-3) according to

the correlation and the peak power of the input signal (paragraph 9, lines 1-3).

As per claim 3, the Prior Art disclosed by the applicant teaches the limitations as

discussed above. The Prior Art disclosed by the applicant further teaches the packet

detection method in claim 1 further comprising determining the periodicity of peaks in the preamble (paragraph 7, lines 15-17).

As per claim 4, the Prior Art disclosed by the applicant teaches the limitations as discussed above. The Prior Art disclosed by the applicant further teaches The packet detection method in claim 3 wherein determining the periodicity of the preamble comprises performing a convolution for a conjugate of a PN code (paragraph 7, line 4) and the PN codes to generate a processed preamble (paragraph 7, lines 7-8).

As per claim 5, the Prior Art disclosed by the applicant teaches the limitations as discussed above. The Prior Art disclosed by the applicant further teaches the packet detection method in claim 1 wherein to obtain a correlation of the input signal comprises obtaining a correlation of the processed preamble (paragraph 8, lines 1-2).

As per claim 6, the Prior Art disclosed by the applicant teaches the limitations as discussed above. The Prior Art disclosed by the applicant further teaches the packet detection method in claim 4 wherein detecting (measuring; paragraph 9, line 1) a peak power of the input signal comprises detecting a peak power of the processed preamble (paragraph 9, line 1).

As per claim 11, the Prior Art disclosed by applicant teaches a method of packet detection, wherein a receiver receives an input signal, the input signal comprising a

packet, and the packet comprising a preamble which comprises a plurality of pseudo-

noise (PN) codes, the method comprising: obtaining a correlation of the input signal

(paragraph 8, line 2); detecting a peak power (paragraph 9, line 1) of the input signal;

and a step for determining if the packet is detected (paragraph 9, line 1-3) according to

the correlation and the peak power of the input signal (paragraph 9, lines 1-3).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the**

Prior Art disclosed by the applicant in view of Nuutinen US 2004/0013174.

As per claim 2, the Prior Art disclosed by the applicant in view of Nuutinen

teaches the limitations as discussed above. The Prior Art disclosed by the applicant in

view of Nuutinen also teaches the packet detection method in claim 1 further comprising

filtering the input signal. The Prior Art disclosed by the applicant lacks filtering of the

input signal. Nuttinen teaches a match filter (fig. 4: element 400 labeled "MF") and

adaptive filtering of the input signal (Nuttinen; paragraph 22).

Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention was made to modify the Prior Art disclosed by the applicant with the

teaching of Nuutinen such as to improve interference cancellation techniques in a direct

sequence spread spectrum signal radio receiver.

8.   **Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable**

   over the Prior Art disclosed by the applicant in view of Suzuki US

   2001/0003531.

As per claim 7, the Prior Art disclosed by the applicant teaches the limitations as

discussed in claim 1. The Prior Art disclosed by the applicant lacks a method for

determining obtaining an average power of the preamble.

The Suzuki reference teaches a packet detection method comprising obtaining

an average power of the preamble (Suzuki, fig. 8: the average operator (105) is capable

of obtaining the average power of the preamble).

Therefore it would be obvious to one of ordinary skill in the art at the time of that

the invention was made to combine the Prior Art disclosed by the applicant with the

teachings of Suzuki in order to provide a spread spectrum signal demodulator in which

a noise component included in respective demodulation symbols is reduced and the

effect of interference removal is improved.

As per claim 9, the Prior Art disclosed by the applicant teaches the limitations as discussed in claim 1. The Prior Art disclosed by the applicant lacks a method for determining obtaining an average power of the noise.

Suzuki further teaches a packet detection method in claim 1 further comprising obtaining an average power of noise (Suzuki, fig. 8: the average operator (105) is capable of obtaining the average power of the noise).

Therefore it would be obvious to one of ordinary skill in the art at the time of that the invention was made to combine the Prior Art disclosed by the applicant with the teachings of Suzuki in order to provide a spread spectrum signal demodulator in which a noise component included in respective demodulation symbols is reduced and the effect of interference removal is improved.

9.   **Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Prior Art disclosed by the applicant in view of Suzuki US 2001/0003531, and in further view of Okanoue USPN 6,738,439.**

As per claim 8, the Prior Art disclosed by the applicant in view of Suzuki, teaches the limitations as discussed above in claim 7. The Prior Art disclosed by the applicant in view of Suzuki lacks two inventive concepts: 1) determining if the ratio of the correlation to the average power of the preamble is larger than a predetermined value and 2) determining if the ratio of the peak power to the average power of the noise is larger than another predetermined value.

The Okanoue reference teaches comparing the value of variables (like the ratio of the correlation to the average power of the preamble and ratio of the peak power to the average power of the noise) to predetermined threshold(s) or value(s) in order to decide which step the invention will go to next (as in deciding if the claimed device detects a packet or not). See Okanoue: col. 1, lines 33-38. The Okanoue reference also teaches ratio of the peak power to the average power of the noise (Okanoue: col. 5, lines 38-45). It is important to note, that peak power claimed by the applicant is in fact a measurement of power of the preamble vs. the power of the noise, which is disclosed in the Okanoue reference.

Therefore it would be obvious to one of ordinary skill in the art at the time of that the invention was made to combine the Prior Art disclosed by the applicant with the teachings of Suzuki, in further view of the teaching of Okanoue in order to avoid increasing the length of the preamble while increase transmission efficiency of a spread spectrum system which the number of antenna branches.

As per claim 10, the Prior Art disclosed by the applicant in view of Suzuki, teaches the limitations as discussed above in claim 9. The Prior Art disclosed by the applicant in view of Suzuki lacks determining if the ratio of the correlation to the average power of the preamble is larger than a predetermined value and determining if the ratio of the peak power to the average power of the noise is larger than another predetermined value.

The Okanoue reference teaches a packet detection method in claim 9 wherein

the packet is detected when the ratio of the correlation to the average power of the

preamble is larger than a predetermined value (Okanoue: col. 1, lines 33-38; this

reference teaches comparing the value of variables to predetermined threshold(s) or

value(s) in order to determine if the packet is detected) and when the ratio of the peak

power (Okanoue: col. 1, lines 33-38) to the average power of the noise (Okanoue: col.

5, lines 38-45) is larger than another predetermined value (Okanoue: col. 1, lines 33-38;

this reference teaches comparing the value of variables to predetermined threshold(s)

or value(s) in order to determine if the packet is detected). It is important to note, that

peak power claimed by the applicant is a measurement of power of the preamble and

the average power of the noise, which is disclosed in the Okanoue reference.

10.   **Claims 12, 13, 16, 17, 23, and 29 are rejected under 35 U.S.C. 103(a) as**

        being unpatentable over Nishio USPN 7,167,505 in view of Zhu US

        2004/0005022.

As per claim 12, Nishio teaches a packet detecting device comprising: a

receiving unit for receiving an input signal (Nishio: fig. 2, 102), the input signal

comprising a packet, the packet comprising a preamble; a **convolution operating unit**

(Nishio: col. 7, lines 43–45) connected to the receiving unit (the convolution operating

unit is electrically connected to the claimed receiving unit) for performing a convolution

of the input signal (Nishio: col. 7, lines 43–45); a **correlation calculating module**

(Nishio: fig. 2: correlation processing section labeled as element 104) connected to the convolution operating unit (the correlation calculating module is electrically connected to the claimed convolution unit) for obtaining a correlation of the input signal; **a peak power detecting module** (Nishio: fig. 2: delay profile generating section labeled as element 105) connected to the convolution operating unit (the peak power detecting module is electrically connected to the claimed convolution operating module) for detecting a peak power of the input signal; and a determining module connected to the correlation calculating module and the peak power detecting module comprising a determining unit which determines if the packet is detected. Nishio lacks the determination module for signaling packet detection.

The Zhu reference does teach **a determining module** (fig. 4: element 1) connected to the correlation calculating module and the module comprising a determining unit (page 1, paragraph 5), which determines if the packet is detected.

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify Nisho with the teaching of Zhu since Zhu teaches the benefits of packet detection in order to provide improved reception of Orthogonal Frequency Division Multiplexed (OFDM) signals in a Wireless Local Area Network (WLAN).

As per claim 13, Nisho in view of Zhu teaches the limitations as discussed in claim 12. Nisho in view of Zhu further teaches the packet detecting device in claim 12 wherein the correlation calculating module comprises a power calculating unit for

obtaining average power (Zhu: page 2, paragraph 35) of the preamble (Zhu: page 2, paragraph 29). Note that the impulse response filter is a type of correlation.

As per claim 16, Zhu further the peak power detecting module comprises a power calculating unit (Zhu: page 6, paragraph 107: the disclosed device uses signal to noise ratio, it is therefore obvious that the disclosed device has the capability to calculate the power of noise in the preamble of the received signal) for obtaining average power of noise of the preamble.

Official Notice is taken that calculating an average value of the claimed noise in the preamble is well known in the art and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify Nisho in view Zhu with the teaching disclosed in the Official Notice in order to determine constant noise levels of a received signal in an Orthogonal Frequency Division Multiplexing (OFDM) receiver.

As per claim 17, Zhu further teaches the peak power detecting module further comprises a division unit (Zhu: page 6, paragraph 107: since the signal to noise (S/N) ratio is maximized in the digital signal process it is obvious that the device disclosed by Zhu has a division module) for dividing the peak power (Zhu: fig. 10: note that the peak power claimed by the applicant refer to the signal power of the preamble since only the preamble is known to both the receiver and transmitter) of the preamble by average

power of the noise (discussed in claim 16) and outputting a division signal to the

determining module (Zhu: page 6, paragraph 107: digital signal processor). Note that

dividing the peak power (signal power of the preamble) by the average (discussed in

claim 16) power of the noise (noise power) is obviously the S/N ratio taught in the Zhu.

As per claim 20, Zhu further the peak power detecting module comprises a

power calculating unit (Zhu: page 6, paragraph 107: the disclosed device uses signal to

noise ratio, it is therefore obvious that the disclosed device has the capability to

calculate the power of noise in the preamble of the received signal) for obtaining

average power of noise of the preamble.

Official Notice is taken that calculating an average value of the claimed noise in

the preamble is well known in the art and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the

invention to modify Nisho in view Zhu with the teaching disclosed in the Official Notice in

order to determine constant noise levels of a received signal in an Orthogonal

Frequency Division Multiplexing (OFDM) receiver.

As per claim 23, Zhu further teaches the determining module (Zhu: fig. 4: 1)

comprises a comparison unit for comparing the division signal (S/N disclosed in claim

21) of the peak power detecting module with a predetermined value (threshold value).

Official Notice is taken that comparing the signal to noise ratio of a received signal to a predetermined value is well known and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify Nisho in view Zhu with the teaching disclosed in the Official Notice in order to determine the signal integrity of the received OFDM signal and the probability that the received signal can be correctly reconstructed to match the signal sent from the transmitter.

As per claim 27, Zhu further teaches the determining module (Zhu: fig. 4: 1) comprises a comparison unit for comparing the division signal (S/N disclosed in claim 21) of the peak power detecting module with a predetermined value (threshold value).

Official Notice is taken that comparing the signal to noise ratio of a received signal to a predetermined value is well known and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify Nisho in view Zhu with the teaching disclosed in the Official Notice in order to determine the signal integrity of the received OFDM signal and the probability that the received signal can be correctly reconstructed to match the signal sent from the transmitter.

As per claim 29, Nisho in view of Zhu in further view of the examiner's Official

Notice teaches the limitations as discussed in claim 27. Nisho in view of Zhu in further

view of the examiner's Official Notice further teaches the packet detecting device in

claim 27 wherein the determining module further comprises a determining unit (Zhu: fig.

4: 1) for determining if the packet arrives according to comparison results of the

comparison unit.

Official Notice is taken that packet detection which compares the S/N ratio to a

predetermined value (threshold value) is well known in the art and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the

invention to modify Nisho in view Zhu with the teaching disclosed in the Official Notice in

order to determine the signal integrity of the received OFDM signal and the probability

that the received signal can be correctly reconstructed to match the signal sent from the

transmitter.

11.   **Claims 14, 19, and 21 are rejected under 35 U.S.C. 103(a) as being**

       unpatentable over Nishio USPN 7,167,505 in view of Zhu US 2004/0005022

       as applied to claim 13 above, and further in view of Bohnke USPN

       7,145,955.

As per claim 14, Nisho in view of Zhu teaches the limitations as discussed in claim 12.

Nisho in view of Zhu in further view of Bohnke further teaches the packet detecting

device in claim 13 wherein the correlation calculating module further comprises a

division unit for dividing the correlation of the preamble by the average power of the

preamble and outputting a division signal to the determining module (Zhu: fig. 4: 1).

Nisho in view of Zhu lacks the division unit.

Bochnke teaches the packet detecting device in claim 13 wherein the correlation

calculating module further comprises a division unit (fig. 2: 8) for dividing the correlation

of the preamble (fig. 2: elements 2, 3, and 4: col. 2, lines 35-41) by the average power

of the preamble (fig. 2: elements 5 and 7 perform an averaging operation on the

disclosed received data. This received data is disclosed to be data from the preamble:

col. 2, lines 1-7) and outputting a division signal to the determining module.

Therefore it would be obvious to one of ordinary skill in the art at the time of the

invention to modify Nisho in view of Zhu with the teachings of Bochnke in order to allow

for better autocorrelation properties on a receiving side of an OFDM system.

As per claim 19, Zhu further teaches the peak power detecting module

comprises a power calculating unit (Zhu: page 6, paragraph 107: the disclosed device

uses signal to noise ratio, it is therefore obvious that the disclosed device has the

capability to calculate the power of noise in the preamble of the received signal) for

obtaining average power of noise of the preamble.

Official Notice is taken that calculating an average value of the claimed noise in

the preamble is well known in the art and expected in the art.

Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify Nisho in view Zhu in further view of Bohnke with the teaching disclosed in the Official Notice in order to determine constant noise levels of the input signal for better autocorrelation properties on a receiving side of an OFDM system.

As per claim 21, Zhu further teaches the peak power detecting module further comprises a division unit (Zhu: page 6, paragraph 107: since the signal to noise (S/N) ratio is maximized in the digital signal processor, it is obvious that the device disclosed by Zhu has a division module in order to find the disclosed S/N ratio) for dividing the peak power (Zhu: fig. 10: note that the peak power claimed by the applicant refer to the signal power of the preamble since only the preamble is known to both the receiver and transmitter) of the preamble by average power of the noise (discussed in claim 19) and outputting a division signal to the determining module (Zhu: page 6, paragraph 107: digital signal processor). Note that dividing the peak power (signal power) by the average (discussed in claim 19) power of the noise (noise power) is obviously the S/N ratio taught in the Zhu reference.

12.   **Claims 15, 25, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishio USPN 7,167,505 in view of Zhu US 2004/0005022 as applied to claim 13 above, and further in view of Husted US 2002/0183027.**

As per claim 15, Nisho in view of Zhu teaches the limitations as discussed in

claim 12. Nisho in view of Zhu in further view of Husted teaches the packet detecting

device in claim 13 wherein the correlation calculation module further comprises a

multiplication unit for multiplying the average power of the preamble by a predetermined

value and outputting a multiplication signal to the determining module. Nisho in view of

Zhu lack the claimed multiplication unit.

Husted teaches a packet detecting device in claim 13 wherein the correlation

calculation module further comprises a multiplication unit for multiplying (Husted, fig. 3:

225, page 5, paragraph 63: note that normalization is multiplication) the average power

of the preamble by a predetermined value (the predetermined value being the inverse of

the input) and outputting a multiplication signal to the determining module (Husted: page

4, paragraph 50).

Therefore it would be obvious to one of ordinary skill in the art at the time of the

invention to modify Nisho in view Zhu with the teachings of Husted since Husted

teaches the beneficial use of a system being able to quickly differentiate in-band signals

from high power out-of-band signals that overlap into the target band.

As per claim 25, Nisho in view of Zhu in further view of Husted teaches the

limitations as discussed in claim 15. Nisho in view of Zhu in further view of Husted

teaches the packet detecting device in claim 15 wherein the determining of module

further comprises a comparison unit for comparing (Husted: page 5, paragraph 63-64: threshold) the multiplication signal (Husted: normalized correlation signal) of the correlation calculating module with the correlation of the preamble (Husted: page 5, paragraph 63).

As per claim 28, Nisho in view of Zhu in further view of Husted teaches the limitations as discussed in claim 25. Nisho in view of Zhu in further view of Husted teaches the packet detecting device in claim 25 wherein the determining of module further comprises a comparison unit for comparing (Husted: page 5, paragraph 63-64: threshold) the multiplication signal (Husted: normalized correlation signal) of the correlation calculating module with the correlation of the preamble (Husted: page 5, paragraph 63).

As per claim 30, Nisho in view of Zhu in further view of Husted teaches the limitations as discussed in claim 28. Nisho in view of Zhu in further view of Husted further teaches the packet detecting device in claim 28 wherein the determining module further comprises a determining unit for determining if the packet arrives (Zhu: page 1, paragraph 23) according to comparison results (Zhu: page 2, paragraph 23-26) of the comparison unit.

Claim Objections

13.   Claims 11, 20, 22 and 27 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 1, 16, 18, and 23 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Warnings Concerning the Claims

14.   Applicant is advised that if claims 1, 16, 18, or 23 are found to be allowable, that claims 11, 20, 22, and 27 respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Allowable Subject Matter

Claims 18, 24, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Perez whose telephone number is (571) 270-3231. The examiner can normally be reached on Monday - Friday, 7:30am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (571) 272-5026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP
5/26/2007

PRIMARY EXAMINER